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EXAMINER	
CROW, ROBERT THOMAS	

ART UNIT	PAPER NUMBER
1634	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/631,189	IANNOTTI ET AL.	
	Examiner	Art Unit	
	Robert T. Crow	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *8 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9 and 24-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 24-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8 February 2007 has been entered.

Status of the Claims

2. This action is in response to papers filed 8 February 2007 in which claims 1 and 24 were amended, claims 10-23 were canceled, and no new claims were added. All of the amendments have been thoroughly reviewed and entered.

The previous rejections under 35 U.S.C. 103(a) not reiterated below are withdrawn in view of the amendments. Applicant's arguments have been thoroughly reviewed and are addressed following the rejections necessitated by the amendments.

The previous rejections under the judicially created doctrine of obviousness-type double patenting are **withdrawn** in view of Applicant's filing of a Terminal Disclaimer. The Terminal disclaimer was approved on 8 February 2007.

Claims 1-9 and 24-37 are under prosecution.

Claim Objections

3. Claim 5 is objected to because of the following informalities: an underline mark between "plant cells" and "and" in line 2 of claim 5 is left over from the previous amendments to the claims. Appropriate correction is required.

4. It is emphasized that Applicant's response filed 30 November 2006 has been considered in the interest of customer service and compact prosecution. However, for the response to this Office Action to be complete, Applicant is **REQUIRED** to correct the errors listed above and file amendments that are compliant with 37 CFR 1.121. Failure to comply with this requirement will be considered **nonresponsive**.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 is indefinite in the recitation "a specific weight ranging from about 75 g/m2 to about 300 g/m2" at the end of the claim. "Specific weight" is an art recognized term for density, which has units of mass/cubic area rather than mass per square area. It is thus unclear what the limit of the specific weight of the filter material is because the specific weight of the filter material is defined using a unit of measurement that is incomplete and therefore unable to describe the desired characteristic of the material.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qiagen (The Qiagenologist Application Protocols, 3rd edition, Qiagen Inc., Chatsworth, CA, pages 2-11 and 30-37 (1990)) in view of Avjioglu et al (U.S. Patent No. 5,480,972, issued 2 January 1996) and in view of Haj-Ahmad (U.S. Patent 6,177,278, issued 23 January 2001), as defined by Webster (Webster's Third New International Dictionary, Miriam-Webster Inc., USA, page 91 (1963))

Regarding claims 1-6, Qiagen teaches a method of preparing a sample substantially free of genomic DNA. In a single exemplary embodiment, Qiagen teaches forming a lysate from liver cells (page 31, steps 1-2), which are organ extracts of animal cells (i.e., claims 5-6). The lysate contains genomic DNA. Qiagen further teaches contacting a pre-filtration column with aid lysate; namely, the lysate is contacted with a Qiagen-tip (page 31, step 9), which is a column comprising a filter material in the form of a resin (page 3). Genomic DNA binds to said filter material (page 4, last paragraph and Table 1 on page 5). A first effluent comprising total RNA; namely, buffer QRU elutes the RNA (page 31, step 12). Buffer QRU does not have enough NaCl to elute the genomic DNA from the column (Page 33 and Table 1 on page 5); thus, the first effluent is substantially free of genomic DNA.

Qiagen further teaches the lysate is formed using a lysis buffer having a chaotropic agent; namely, solutions R1-R4 are added to homogenize and lyse the sample, wherein the buffers comprise 4M guanidine isothiocyanate (i.e., claims 2-4; pages 31 and 33).

Qiagen also teaches the column comprises a frit (page 11, third paragraph). A frit is a layer. Webster's defines a frit as comprising glass (page 912); thus, Qiagen teaches a glass layer in the form of a frit.

Qiagen does not teach contacting a second column with the first effluent.

However, Avjioglu et al teach a method of preparing a sample substantially free of genomic DNA in the form of a method for purification and separation of mRNA (; column 14, line 35-column 15, line 10). Avjioglu et al teach collecting an effluent from a prefiltration column run with a lysate and subjecting the effluent to a second column (column 14, line 35-column 15, line 10). Avjioglu et al also teach the second column has the added advantage of increasing the purity of the sample to over 90% (column 15, lines 1-10).

It would therefore have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to have modified the method of Qiagen with the second column of Avjioglu et al with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because said modification would have resulted in a method having the added advantage of increasing the purity of the sample to over 90% as explicitly taught by Avjioglu et al (column 15, lines 1-10).

Neither Qiagen nor Avjioglu et al teach silicon carbide whisker columns.

However, Haj-Ahmad teaches a method of isolating a nucleic acid from a sample matrix comprising contacting a silicon carbide column with said sample preparation (column 3, lines 38-41), and eluting said nucleic from said silicon carbide column (column 3, lines 41-55) with the added benefit that silicon carbide is an affordable and readily available substance available in a variety of grades, each grade having a different capacity for binding nucleic acids (column 2, lines 30-35).

While Haj-Ahmad also teaches the preferred embodiment wherein the silicon carbide has an average particle size of 4.5 microns (column 4, lines 1-3), neither Qiagen, Avjioglu, nor Haj-Ahmad specifically teach silicon carbide whiskers. However, the specification does not define what is

encompassed by the term "whisker." The term "whisker" has therefore been interpreted to be encompassed by the preferred embodiment of Haj-Ahmad, wherein the silicon carbide particles have an average particle size of 4.5 microns (column 4, lines 1-3). Thus, the claim has been given the broadest reasonable interpretation consistent with the specification (*In re Hyatt*, 211 F.3d1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000) (see MPEP 2111 [R-1]).

In addition, the courts have held that "where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device." (*Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984), (see MPEP 2144.04, IVA). In the event that the instantly claimed "whiskers" are not encompassed by the micron sized particles of Haj-Ahmad, the instantly claimed "whiskers" would therefore merely be a form of silicon carbide having different relative dimensions than those of the prior art, and as such are not patentably distinct from the particles of Haj-Ahmad.

It would therefore have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to have modified the method comprising a second column as taught by Qiagen in view of Avjioglu et al by using a silicon carbide column as taught by Haj-Ahmad with a reasonable expectation of success. The ordinary artisan would have been motivated to make the modification because the modification would have resulted in method having a column composed of an affordable and readily available substance available in a variety of grades, each grade having a different capacity for binding nucleic acids as explicitly taught by Haj-Ahmad (column 2, lines 30-35).

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Qiagen (The Qiagenologist Application Protocols, 3rd edition, Qiagen Inc., Chatsworth, CA, pages 2-11 and 30-37 (1990)) in view of Avjioglu et al (U.S. Patent No. 5,480,972, issued 2 January 1996) and in view of Haj-Ahmad (U.S. Patent 6,177,278, issued 23 January 2001), as defined by Webster (Webster's Third New International Dictionary, Miriam-Webster Inc., USA, page 91 (1963)) as applied to claim 1 above, and further in view of Poad (U.S. Patent No 3,414,394, issued 3 December 1996).

Regarding claim 7, the method of claim 1 is discussed above on pages 4-6. Neither Qiagen, Avjioglu, nor Haj-Ahmad et al teach the filter material (i.e., the frit) has a particle retention (i.e., pore size) from about 0.1 to about 10 microns.

However, Poad teaches frits having pore sizes of about 2.4 microns (column 2, lines 20-30) having the added advantage of having both high strength and high permeability (column 1, lines 55-59). High permeability decreases the time required to run the column.

It would therefore have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to have modified the method comprising a fritted column as taught by Qiagen in view of Avjioglu et al in view of Haj-Ahmad with the filter material having the pore size as taught by Poad with a reasonable expectation of success. The ordinary artisan would have been motivated to make the modification because the modification would have resulted in method having a column having both high strength and decreased running times as explicitly taught by Poad (column 1, lines 55-59).

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Qiagen (The Qiagenologist Application Protocols, 3rd edition, Qiagen Inc., Chatsworth, CA, pages 2-11 and 30-37 (1990)) in view of Avjioglu et al (U.S. Patent No. 5,480,972, issued 2 January 1996) and in view of Haj-Ahmad (U.S. Patent 6,177,278, issued 23 January 2001), as defined by Webster (Webster's Third New International Dictionary,

Miriam-Webster Inc., USA, page 91 (1963)) as applied to claim 1 above, and further in view of Colpan et al (U.S. Patent No. 6,383,393 B1, issued 7 May 2002),

Regarding claim 8, the method of claim 1 is discussed above on pages 4-6. Neither Qiagen, Avjioglu, nor Haj-Ahmad et al explicitly teach the filter material is about 50 to about 2000 microns thick.

However, Colpan et al teach the use of pre-filtration columns comprising at least one layer of glass in the filter material (column 7, lines 30-36), wherein the glass layer has fibers having a thickness (i.e., length) of about 300 microns (column 7, lines 30-32). Colpan et al also teach the glass fibers have the added advantage of allowing quantitative, specific, and reversible binding of the nucleic acid sample to the fibers (column 4, lines 53-60).

It would therefore have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to have modified the method as taught by Qiagen in view of Avjioglu et al in view of Haj-Ahmad with the filter material having the thickness as taught by Colpan et al with a reasonable expectation of success. The ordinary artisan would have been motivated to make the modification because the modification would have resulted in method having a column having the added advantage of allowing quantitative, specific, and reversible binding of the nucleic acid sample to the fibers as explicitly taught by Colpan et al (column 1, lines 55-59).

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Qiagen (The Qiagenologist Application Protocols, 3rd edition, Qiagen Inc., Chatsworth, CA, pages 2-11 and 30-37 (1990)) in view of Avjioglu et al (U.S. Patent No. 5,480,972, issued 2 January 1996) and in view of Haj-Ahmad (U.S. Patent 6,177,278, issued 23 January 2001), as defined by Webster (Webster's Third New International Dictionary, Miriam-Webster Inc., USA, page 91 (1963)) as applied to claim 1 above, and further in view of the Aldrich Catalog (Aldrich Chemical Company, Milwaukee, WI, page T289 (1998/1999)).

Regarding claim 9, the method of claim 1 is discussed above on pages 4-6 . Neither Qiagen, Avjioglu et al, nor Haj-Ahmad teach the specific weight of the glass filters.

However, Aldrich teaches glass fibers suitable for use in chromatography that are 2 in diameter bundles that are 22 feet long, weighing 454 g (page T281, column 2, paragraph 1). A filter layer having a 2 in (5.08 cm) diameter has an area of 0.00203 m^2; therefore, a filter layer having a 2 in diameter and a length (i.e., the thickness of the layer in a column) of 0.25 in has a specific weight of 212 g/m^2, thereby meeting the limitation of the claim. Aldrich also teaches the glass fibers are strong and free of heavy metals (page T281, column 2, paragraph 1).

It would therefore have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to have modified the method as taught by Qiagen in view of Avjioglu et al in view of Haj-Ahmad with the filter material having the specific weight as taught by Aldrich with a reasonable expectation of success. The ordinary artisan would have been motivated to make the modification because the modification would have resulted in method having a column having a glass layer having the added advantages of strength and freedom from heavy metal contaminants as explicitly taught by Aldrich (page T281, column 2, paragraph 1).

11. Claims 24-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Qiagen (The Qiagenologist Application Protocols, 3rd edition, Qiagen Inc., Chatsworth, CA, pages 2-11 and 30-37 (1990)) in view of Avjioglu et al (U.S. Patent No. 5,480,972, issued 2 January 1996), in view of Haj-Ahmad (U.S. Patent 6,177,278, issued 23 January 2001), and in view of Dove et al (U.S. Patent No. 5,006,472, issued 9 April 1991), as defined by Webster (Webster's Third New International Dictionary, Miriam-Webster Inc., USA, page 91 (1963)).

Regarding claims 24-29, and 32-36, Qiagen teaches a method of preparing a sample substantially free of genomic DNA. In a single exemplary embodiment, Qiagen teaches forming a lysate (page 31, steps 1-2). The lysate contains genomic DNA. Qiagen further teaches contacting a pre-filtration column with aid lysate; namely, the lysate is contacted with a Qiagen-tip (page 31, step 9), which is a column comprising a filter material in the form of a resin (page 3). Genomic DNA binds to said filter material

(page 4, last paragraph and Table 1 on page 5). A first effluent comprising total RNA,; namely, buffer QRU elutes the RNA (i.e., claim 25; page 31, step 12). Buffer QRU does not have enough NaCl to elute the genomic DNA from the column (Page 33 and Table 1 on page 5); thus, the first effluent is substantially free of genomic DNA.

Qiagen further teaches the lysate is formed using a lysis buffer having a chaotropic agent; namely, solutions R1-R6 are added to homogenize and lyse the sample, wherein the buffers comprise 4M guanidine isothiocyanate (i.e., claims 27-29), beta-mercaptoethanol (i.e., claim 33), a ph of about 4 to about 8 (i.e., claim 34; pages 31 and 33). Qiagen also teaches RNA buffers are treated with DEPC to make them ribonuclease free (i.e., claim 35; page 9, last paragraph). The sample is eluted with buffer QRU, which has a pH of about 6 to about 9 (i.e., claim 36).

Qiagen also teaches the column comprises a frit (i.e., claim 32; page 11, third paragraph). A frit is a layer. Webster's defines a frit as comprising glass (page 912); thus, Qiagen teaches a glass layer in the form of a frit.

Qiagen does not teach contacting a second column with the first effluent.

However, Avjioglu et al teach a method of preparing a sample substantially free of genomic DNA in the form of a method for purification and separation of mRNA (; column 14, line 35-column 15, line 10). Avjioglu et al teach collecting an effluent from a prefiltration column run with a lysate and subjecting the effluent to a second column (column 14, line 35-column 15, line 10). Avjioglu et al also teach the second column has the added advantage of increasing the purity of the sample to over 90% (column 15, lines 1-10).

It would therefore have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to have modified the method of Qiagen with the second column of Avjioglu et al with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because said modification would have resulted in a method having the added

advantage of increasing the purity of the sample to over 90% as explicitly taught by Avjioglu et al (column 15, lines 1-10).

Neither Qiagen nor Avjioglu et al teach silicon carbide whisker columns.

However, Haj-Ahmad teaches a method of isolating a nucleic acid from a sample matrix comprising contacting a silicon carbide column with said sample preparation (column 3, lines 38-41), and eluting said nucleic from said silicon carbide column (column 3, lines 41-55) with the added benefit that silicon carbide is an affordable and readily available substance available in a variety of grades, each grade having a different capacity for binding nucleic acids (column 2, lines 30-35).

While Haj-Ahmad also teaches the preferred embodiment wherein the silicon carbide has an average particle size of 4.5 microns (column 4, lines 1-3), neither Qiagen, Avjioglu, nor Haj-Ahmad specifically teach silicon carbide whiskers. However, the specification does not define what is encompassed by the term "whisker." The term "whisker" has therefore been interpreted to be encompassed by the preferred embodiment of Haj-Ahmad, wherein the silicon carbide particles have an average particle size of 4.5 microns (column 4, lines 1-3). Thus, the claim has been given the broadest reasonable interpretation consistent with the specification (*In re Hyatt*, 211 F.3d1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000) (see MPEP 2111 [R-1]).

In addition, the courts have held that "where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device." (*Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984), (see MPEP 2144.04, IVA). In the event that the instantly claimed "whiskers" are not encompassed by the micron sized particles of Haj-Ahmad, the instantly claimed "whiskers" would therefore merely be a form of silicon carbide having different relative dimensions than those of the prior art, and as such are not patentably distinct from the particles of Haj-Ahmad.

It would therefore have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to have modified the method comprising a second column as taught by Qiagen in view of Avjioglu et al by using a silicon carbide column as taught by Haj-Ahmad with a reasonable expectation of success. The ordinary artisan would have been motivated to make the modification because the modification would have resulted in method having a column composed of an affordable and readily available substance available in a variety of grades, each grade having a different capacity for binding nucleic acids as explicitly taught by Haj-Ahmad (column 2, lines 30-35).

Neither Qiagen, Avjioglu et al, nor Haj-Ahmad teach DNAse.

However, Dove et al teach a method of preparing a sample via a purification process using enzymatic treatment (Abstract) comprising contacting nucleic acids bound to a column with DNAse, under conditions suitable for DNAse digestion; namely, DNA is degraded when it is bound by DNAse that is immobilized on a column (column 3, lines 20-24); therefore, when the DNA is bound to the immobilized DNAse, the DNA is bound to the column and contacts the DNAse. Dove et al also teach the added advantage that the treatment on the column results in the degradation of undesirable residual nucleic acids (Abstract).

It would therefore have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified the columns as taught by Qiagen in view of Avjioglu et al in view of Haj-Ahmad with the columns comprising DNAse as taught by Dove et al with a reasonable expectation of success. The modification taught by Dove et al would result in including DNA digestion during the collection of the effluent from the pre-filtration column (i.e., claim 26) as well as DNA digestion during the contacting with the silicon carbide column. The ordinary artisan would have been motivated to make the modification because the modification would have resulted in a method having the added advantage of allowing the degradation of undesirable residual nucleic acids on each of the two columns as explicitly taught by Dove et al (Abstract).

Regarding claims 30-31, the method of claim 24 is discussed above. While Qiagen do not explicitly teach organic solvents in the lysis step, Qiagen does teach organic solvents in the form of ethanol (i.e., claim 31) are added to the lysate. The courts have held that selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results (*In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946). Thus, the addition of organic solvents during the lysis step is obvious over the later addition of organic solvents as taught by Qiagen. See MPEP 2144.04 IV.C.

12. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Qiagen (The Qiagenologist Application Protocols, 3rd edition, Qiagen Inc., Chatsworth, CA, pages 2-11 and 30-37 (1990)) in view of Avjioglu et al (U.S. Patent No. 5,480,972, issued 2 January 1996), in view of Haj-Ahmad (U.S. Patent 6,177,278, issued 23 January 2001), in view of Dove et al (U.S. Patent No. 5,006,472, issued 9 April 1991), as defined by Webster (Webster's Third New International Dictionary, Miriam-Webster Inc., USA, page 91 (1963)), as applied to claim 24 above, and further in view of Crossway et al (U.S. Patent No. 4,996,144, issued 26 February 1991).

Regarding claim 37, the method of claim 24 is discussed above on pages 9-13. Neither Qiagen, Avjioglu et al, Haj-Ahmad, nor Dove et al teach additional digestion with DNAse.

However, Crossway et al teach a method of purification of nucleic acids (e.g., RNA; Abstract, lines 3-5) using additional digestion with DNAse with the added benefit of allowing differential detection of RNA only (column 5, lines 60-63).

It would therefore have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to have modified the method of isolating a nucleic acid as taught by Qiagen, Avjioglu et al, Haj-Ahmad, and Dove et al with the additional DNAse treatment as taught by Crossway et al with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because the modification would have resulted in a method having the added

advantage of allowing differential detection of RNA only as explicitly taught by Crossway et al (column 5, lines 60-63).

Response to Arguments

13. Applicant's arguments with respect to the previous rejections of the claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. No claim is allowed.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert T. Crow whose telephone number is (571) 272-1113. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RAM R. SHUKLA, PH.D.
SUPERVISORY PATENT EXAMINER

Robert T. Crow
Examiner
Art Unit 1634